

**ABSTRACT**

The present invention is generally directed toward a method of measuring surfactant penetration into a foam layer of a filter for an air filter assembly. The method comprises the addition of a dye to a surfactant, adding the dye laden surfactant to the foam layer, illuminating the foam layer after the dye laden surfactant has been added, observing the amount of illumination, and determining the amount of surfactant penetration by the amount of illumination of the foam layer.